

# DECONTAMINATION OF GAS PLANT ELIMINATING THE NEED FOR SCBA DURING TURNAROUND

## Project

ZymeFlow® partnered with a pioneer in sour gas field development and operates one of the largest ultra-sour gas operation in the Middle East, with the capacity to produce 1.28 billion standard cubic feet of gas per day and 4.2 million tons of sulphur per year. This gas plant is located in a remote location with very high hydrogen sulfide concentration in their red zone area. The entry to the process area is restricted and only allowed with SCBA (self-contained breathing apparatus). Due to high risk in the area and fixed capacity for the safe zone that has clean air inside the red zone, manpower on the plant was limited.

## Challenges

The plant processes ultra-sour gas containing more than 23% hydrogen sulfide thus this situation requires to wear SCBA all the time during both operation and maintenance. Our team had to execute decontamination using SCBA and due to ultra-high hydrogen sulfide level, it was challenging to achieve “0 ppm hydrogen sulfide” specification.

## Past Procedure

The plant had a strict policy to use SCBA during the turnaround however, this was causing manpower limitation and shut down schedule was prolonged.

## Engineered Solution

Based on the unit process conditions, ZymeFlow Engineering team worked closely with operations personnel to address the issues and understand their needs and expectations. The ZymeFlow team meticulously planned the project, determining every injection and drain point. They also engineered the best way to utilize patented Zyme-Flow chemical which is a surfactant and oxidizer package that simultaneously de-oils, eliminates LEL and benzene, and oxidizes hydrogen sulfide and pyrophoric iron sulphide in a steam injection (Vapour-Phase).

## Results

After less than 12 hours of Vapour-Phase, ZymeFlow personnel confirmed contaminant levels in the gas plant: hydrogen sulfide and LELs measured 0 ppm. Upon opening, there was no threat of pyrophoric activity and gas plant personnel were able to enter and perform maintenance and hot work without incident.

Decontamination was 100% effective and the environment was hydrogen sulfide free, therefore gas plant management decided not to use SCBA equipment during turnaround in the plant which was the first time this was possible. This allowed them to have unlimited manpower in the plant and shortened maintenance schedule. We set an impressive decontamination benchmark for the site and the lead engineer said “We are very satisfied with service, product and people”.

